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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,427	07/28/2000	Tai-Her Yang	EM/YANG/5860	2978

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EXAMINER

NGUYEN, TRAN N

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/628,427

Applicant(s)

YANG, TAI-HER

Examiner

Tran N Nguyen

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 18,19,21,25-36 and 39-44 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 18,19,25-36,39 and 40 is/are rejected.
- 7) ☐ Claim(s) 21, 41-44 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 11 February 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 18-19, 25, 29-34, and 40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Carpenter (US 4742257), in view of Barcus (US 4244098).

Carpenter discloses an air cooler for an enclosed electrical machine (fig 1-3) comprising: an enclosed electrical machine having a casing (11) having an inlet and an outlet; an air cooler device comprising: a heat dissipation having a plurality of cooling fins (33') located on an exterior of the closed coolant circulation structure, wherein the closed coolant circulation structure and the heat dissipation are integrally formed with the casing, wherein the casing having a cover (50); a closed coolant circulation structure (figs 1-3) having inner peripheral surface (12) with a plurality of cooling fins (33') forming with cover (5) to form inlet-outlet pipes acting as channel for connecting the heat dissipation with the inlet and the outlet; a fan (30) which is driven by the rotary machine's output shaft, and the fan is situated within the casing and arranged to circulate the coolant through the closed coolant circulation structure and through the inlet of the machine thereby forming a closed circuit of coolant circulation, wherein the heat dissipation device with cooling fins removing heat from heat generating stator and rotor of the

Art Unit: 2834

machine. Carpenter substantially discloses the claimed invention, except for the limitations of the dissipation device is an independent structure relative to the casing.

Barcus, however, teaches the dissipation device is an independent structure relative to the casing (fig 2) with such feature would enable a cooling arrangement for transferring heat from the housing without defacing the finish on an outer casing of the machine.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cooler device by configuring the heat dissipation device as an independent structure relative to the casing, as taught by Barcus. This would enable the heat dissipation to be formed separately from the casing and incorporate in the machine independently form the casing without defacing the finish on an outer casing of the machine.

2. **Claims 26-27**, are rejected under 35 U.S.C. 103(a) as being unpatentable **Carpenter** and **Barcus**, as applied in the base claim, and further in view of **Lordo et al** (US 4839547) or **Koyama et al** (JP 57-68640).

The combination of Carpenter and Barcus discloses the claimed invention, each of the two refs discloses the claimed invention, except for the added limitations of the heat dissipation device and the closed coolant circulation structure comprising tubular structures installed with exterior and interior cooling fins.

Koyama, however, two tubular structures respectively have exterior cooling fins and interior cooling fins (figs 1-2) for enhancing the effect of cooling ventilation.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cooler device by configuring the heat dissipation device and

Art Unit: 2834

the closed coolant circulation device as two tubular structures, wherein each of which respectively has one of exterior and interior cooling fins, taught by Koyama. Doing so would enhance the effect of cooling ventilation and heat dissipation.

Alternately, Lordo also teaches a tubular heat dissipation device that have both interior and exterior cooling fins, wherein the exterior cooling fins function as heat dissipating means while the interior cooling fins incorporating as fluid contacted heat exchange means. This would increase cooling and ventilation capacity.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cooler device by configuring the heat dissipation device and the closed coolant circulation device as tubular structure having both exterior and interior cooling fins, taught by Lordo. Doing so would increase the effect of cooling ventilation and heat dissipation.

3. **Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable **Carpenter** and **Barcus**, as applied in the base claim, and further in view of **Nakano** (US 6114784).

The combination of Carpenter and Barcus discloses the claimed invention; each of the two refs discloses the claimed invention, except for the added limitations of the closed coolant circulation having a filter installed therein.

Nakano, however, teaches a motor with cooling structure having air filters (70, 171) are installed at the openings (41w, 50w) respectively so that cooling air is supplied to an inner space of the motor housing through the air filters. The arrangement of the air filters prevents dust

including iron powder from entering into the motor housing 41, so as not to attach iron powder to the permanent magnets 37 and 38 of the motor.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cooler device by providing filter therein, as taught by Nakano. Doing so would prevent dust including iron powder from entering into the motor.

4. **Claim 36**, as understood, is rejected under 35 U.S.C. 103(a) as being unpatentable **Carpenter and Barcus**, as applied in the base claim, and further in view of **Hasegawa et al** (US 4814653).

The combination of Carpenter and Barcus discloses the claimed invention, each of the two refs particularly discloses a rotational electric motor which is understood as a transmission mechanism, i.e., since the rotational electric machine provide mechanical output power which may be used as rotational torque those skilled in the art would realize that broadly the disclosed rotational electric motor is read as a transmission mechanism. Carpenter discloses the claimed invention, except for the added limitations of an outside of the casing forms an air chamber having cooling fins.

Hasegawa, however, teaches an air cooler device for a machine comprising a casing (30) wherein an air chamber (40) with cooling fins (32) formed inside the chamber (40). The chamber (40) serves as a communication flow for the inlet and outlet coolant.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cooler device by providing an air chamber, with cooling fins, formed outside of the casing, as taught by Hasegawa. Doing so would provide communication airflow between the inlet and the outlet coolant.

Art Unit: 2834

5. **Claims 35 and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable **Carpenter** in view of **Hayashi** (US 5770899).

Carpenter discloses the claimed invention, each of the two refs discloses the claimed invention, except for the added limitations of the inlet and outlet pipes, and the heat distribution is a liquid cooler device with control valve.

Hayashi, however, teaches a heat dissipation structure as a liquid cooling device. As shown in FIG. 3, the fluid (F) flowing from the inlet pipe (24) into an inlet of the tube-like container (36) of the electric machine main body (31) flows through the passage (40) of the cooling mechanism. Then, the fluid flows through the outlet pipe (25) of (FIG. 3) connected to an outlet of the tube-like container (36) of the cooling mechanism and returns again to the reservoir tank (20). The pipes 21, 24, 25 are provided with valves (not shown) such as stop valves and control valves, and the flow of the fluid is controlled by those valves. The fluid cooler device provide means to reduce thermal heat in the electric machine

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cooler device by configuring the heat dissipation device as a liquid cooler device having inlet and outlet pipes controlled by valve, as taught by Hayashi. Doing so would provide means to restrain the temperature rise due to generation of heat in the electric machine.

Allowable Subject Matter

Art Unit: 2834

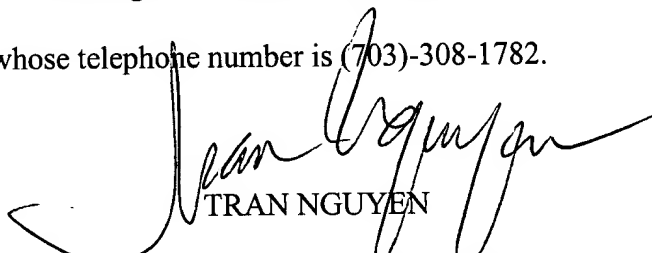
Claims 21, 41-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N Nguyen whose telephone number is (703) 308-1639. The examiner can normally be reached on M-F 6:00AM-2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703)-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)-395-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-1782.


TRAN NGUYEN
PRIMARY PATENT EXAMINER

TC-2800